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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/711,844	10/08/2004	Brent A. Anderson	BUR920040173US1	5843
46170	7590	08/31/2006	EXAMINER	
WHITHAM, CURTIS & CHRISTOFFERSON, P.C. 11491 SUNSET HILLS ROAD, SUITE 340 RESTON, VA 20190			ERDEM, FAZLI	
			ART UNIT	PAPER NUMBER
			2826	

DATE MAILED: 08/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/711,844	ANDERSON ET AL.	
	Examiner	Art Unit	
	Fazli Erdem	2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 14-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-12 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/18, 11/09, 10/8</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Allowable Subject Matter***

1, Claim 9 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1 and 2 rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. (6,835,981) in view of Furukawa et al. (6,555,891).

Regarding Claims 1 and 2, Yamada et al. disclose a semiconductor chip which combines bulk and SOI regions and separates same with plural isolation regions where in Fig. 2 it is disclosed a semiconductor on insulator region on the right side with buried dielectric layer 22, a bulk semiconductor region on the left adjacent to the SOI region, a trench 47 disposed between the SOI region and bulk region. Yamada et al. fail to disclose the trench to be filled with epitaxial semiconductor material and the required sidewalls of the trench. However, Furukawa et al. disclose an SOI hybrid structure with selective epitaxial growth of silicon where the trench 20 is filled with epitaxial semiconductor and the required sidewalls 30.

It would have been obvious to one of having ordinary skill in the art at the time the invention was made to include the required trench filling in Yamada et al. as taught by Furukawa et al. in order to have a semiconductor device with increased performance.

2. Claims 3-8 and 10-12 rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. (6,835,981) in view of Furukawa et al. (6,555,891) further in view of Yamada et al. (6,906,384)

Regarding Claims 3-8 and 10-12, Yamada et al.('981) disclose a semiconductor chip which combines bulk and SOI regions and separates same with plural isolation regions where in Fig. 2 it is disclosed a semiconductor on insulator region on the right side with buried dielectric layer 22, a bulk semiconductor region on the left adjacent to the SOI region, a trench 47 disposed between the SOI region and bulk region. Yamada et al. fail to disclose the trench to be filled with epitaxial semiconductor material with the required sidewalls of the trench and the required junction/doping configuration. However, Furukawa et al. disclose an SOI hybrid structure with selective epitaxial growth of silicon where the trench 20 is filled with epitaxial semiconductor and the required sidewalls 30. Furthermore, Yamada et al. ('384) disclose a semiconductor device having one of patterned SOI and SON region where in Figs, 2A, 3A and 4C the required junction/doping configuration is disclosed.

It would have been obvious to one of having ordinary skill in the art at the time the invention was made to include the required trench filling and the required

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junction/doping configuration in Yamada et al. as taught by Furukawa et al. and Yamada et al. ('384) in order to have a semiconductor device with increased performance.

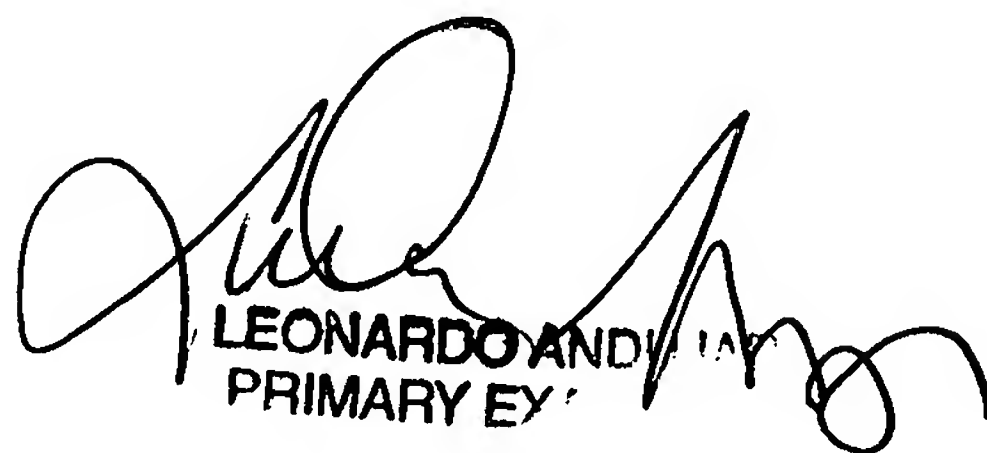
### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fazli Erdem whose telephone number is (571) 272-1914. The examiner can normally be reached on M - F 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

FE  
August 24, 2006

  
LEONARDO ANDUJAR  
PRIMARY EX